Project Fact Sheet

CEC / SMUD Regen Programmatic Project

GOALS

- Develop technologies and products that can open broad renewable energy markets in California and the West.
- Develop resources that will allow SMUD to increase its portfolio of renewable generating assets.
- Provide technologies to help SMUD reduce its summer peak-period demand for electricity.
- Make Sacramento a center for the development, testing and implementation of new renewable generating technologies.
- Dramatically reduce the cost of photovoltaic (PV) installations in Sacramento and the western United States.
- Begin to develop biomass-generating possibilities for Northern California.
- Test and develop a wind technology potentially suitable for SMUD's Rio Vista wind farm.
- Test and develop a concentrating solar power generating system.

PROJECTS

Projects Targeting Renewable Electricity Development

Project 1.1 *Technology Assessment for Advanced Biomass Power Generation – UCD-Jenkins*
Project 1.2 *Photovoltaic Markets and Technologies – Solar Electric power Assoc.*
Project 1.3 *Utility System Capacity and Customer Demand Value of PV – NREL*
Project 1.4 *Performance Indexing of PV Systems – TBD*
Project 1.5 *Assessment of Worst-Case Weather Conditions – TBD*

Projects Increasing Affordability By Improving Existing Facilities

Project 2.1 *Accelerated Anaerobic Composing for Energy Generation – Yolo County Landfill*

Projects Expanding Affordability And Diversity Using Renewable Distributed Technologies

Project 3.1 *Laminate & Batten Roofing System – Uni-Solar*
Project 3.2 *BIPV Mounting Approaches for New Construction – Schott Applied Science*
Project 3.3 *Mainstreaming PV for Residential Roofs – Power Light*
Project 3.4 *Flat Roof Mounting Approaches – Schott Applied Power*
Project 3.5 *Optimization of Residential PV Systems – Astro Power*
Project 3.6 *Remote Dispatch & PV Irrigation – TBD*
Project 3.7 *PV & Evaporative Cooling – Jenrus Corp.*
Project 3.8 *Solar Dish Concentrating with Stirling Engine - SAIC*

Projects Developing Renewable Technologies For Tomorrow's Electricity System

Project 4.1 *Non-Vacuum Thin-Film CIGS Modules - Unisun*
Project 4.2 *Maximum Power Point Tracker Inverter Development - SMA*
Project 4.3 *Hybrid PV/Lighting System – Oak Ridge Nat. Lab*

Project 4.4 *Slat Array Concentrator – Sergei Vasylyev*
Project 4.5 *Distributed Generation Geartrain for Megawatt Turbines – Dehlsen Associates, LLC*

BENEFITS TO CALIFORNIA

- The success from these projects is directly connected to the energy market through SMUD's commitment to renewables in its own territory, as well as the interconnection relationships between other California Municipal and Investor Owned Utilities.
- California users will have access to the latest and most comprehensive information available from the research projects. Specific manufactures will provide their advanced solutions to the California energy market.
- SMUD expects many technologies developed in this Program to begin to enter the marketplace within one to two years.
- SMUD expects to reduce the installed cost of PV in the SMUD service area from a present level of $5.00 per Watt and up to under $3.50 per Watt or less by the end of 2006.
- Under the ReGen Program SMUD will begin the development of plug-and-play roofing systems that may ultimately make PV roofs the most common type of roof in California.
- Within a decade, wind and biomass technologies from the Program are likely to be in use in California.

FUNDING AMOUNT

Commission	$13,649,499
Match	$10,549,534
Total	$24,199,033

PROJECT STATUS

Project is underway with various ongoing successful activities.

FOR MORE INFORMATION

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